

## Pacific University CommonKnowledge

---

School of Professional Psychology

Theses, Dissertations and Capstone Projects

---

12-16-2011

# Development of a Psychoeducational Program Designed to Improve Medication Adherence in a Community Mental Health Setting

Megan Phillips  
*Pacific University*

---

### Recommended Citation

Phillips, Megan (2011). Development of a Psychoeducational Program Designed to Improve Medication Adherence in a Community Mental Health Setting (Doctoral dissertation, Pacific University). Retrieved from:  
<http://commons.pacificu.edu/spp/183>

This Dissertation is brought to you for free and open access by the Theses, Dissertations and Capstone Projects at CommonKnowledge. It has been accepted for inclusion in School of Professional Psychology by an authorized administrator of CommonKnowledge. For more information, please contact [CommonKnowledge@pacificu.edu](mailto:CommonKnowledge@pacificu.edu).

---

# Development of a Psychoeducational Program Designed to Improve Medication Adherence in a Community Mental Health Setting

## **Abstract**

The purpose of this study was to address the well-established problem of poor medication adherence within mental health settings by designing a psychoeducational program to educate clients about the medications they are prescribed. The program was intended to be implemented within a community mental health setting and was scheduled to be facilitated by pharmacists affiliated with this agency. Assessments were also developed to evaluate the effectiveness of the new program. However, after an absence of participant involvement, a focus group was established to generate solutions to the lack of client attendance problem. Suggestions were generated for future program designs that might mitigate the observed problems.

## **Degree Type**

Dissertation

## **Rights**

[Terms of use for work posted in CommonKnowledge.](#)

## **Comments**

**Library Use:** LIH

---

### Copyright and terms of use

If you have downloaded this document directly from the web or from CommonKnowledge, see the “Rights” section on the previous page for the terms of use.

**If you have received this document through an interlibrary loan/document delivery service, the following terms of use apply:**

Copyright in this work is held by the author(s). You may download or print any portion of this document for personal use only, or for any use that is allowed by fair use (Title 17, §107 U.S.C.). Except for personal or fair use, you or your borrowing library may not reproduce, remix, republish, post, transmit, or distribute this document, or any portion thereof, without the permission of the copyright owner. [Note: If this document is licensed under a Creative Commons license (see “Rights” on the previous page) which allows broader usage rights, your use is governed by the terms of that license.]

Inquiries regarding further use of these materials should be addressed to: CommonKnowledge Rights, Pacific University Library, 2043 College Way, Forest Grove, OR 97116, (503) 352-7209. Email inquiries may be directed to: [copyright@pacificu.edu](mailto:copyright@pacificu.edu)

DEVELOPMENT OF A PSYCHOEDUCATIONAL PROGRAM DESIGNED TO IMPROVE  
MEDICATION ADHERENCE IN A COMMUNITY MENTAL HEALTH SETTING

A DISSERTATION  
SUBMITTED TO THE FACULTY  
OF THE  
SCHOOL OF PROFESSIONAL PSYCHOLOGY  
PACIFIC UNIVERSITY  
HILLSBORO, OREGON  
BY  
MEGAN PHILLIPS, MS  
IN PARTIAL FULFILLMENT OF THE  
REQUIREMENTS FOR THE DEGREE  
OF  
DOCTOR OF PSYCHOLOGY  
December 16, 2011 OF FALL TERM

APPROVED BY THE COMMITTEE

Lisa Christiansen, PsyD

Paul Michael, PhD

Jay Thomas, PhD

## TABLE OF CONTENTS

	Page
ABSTRACT.....	iii
ACKNOWLEDGMENTS.....	iv
LIST OF FIGURES.....	v
INTRODUCTION.....	1
LITERATURE REVIEW.....	3
LOGIC MODEL.....	9
PRELIMINARY STUDY DESIGN.....	10
PROCEDURE IMPLEMENATION AND IMPEDIMENTS.....	15
FOCUS GROUP METHOD.....	17
FOCUS GROUP DISCUSSION.....	22
Revised Logic Model.....	24
FOCUS GROUP CONCLUSION.....	24
GENERAL DISCUSSION AND CONCLUSIONS.....	26
REFERENCES.....	29
APPENDIXES.....	32

**Abstract**

The purpose of this study was to address the well-established problem of poor medication adherence within mental health settings by designing a psychoeducational program to educate clients about the medications they are prescribed. The program was intended to be implemented within a community mental health setting and was scheduled to be facilitated by pharmacists affiliated with this agency. Assessments were also developed to evaluate the effectiveness of the new program. However, after an absence of participant involvement, a focus group was established to generate solutions to the lack of client attendance problem. Suggestions were generated for future program designs that might mitigate the observed problems.

Key words: program evaluation, medication adherence, focus groups

### **Acknowledgments**

I would like to thank my dissertation committee, Dr. Jay Thomas, Dr. Lisa Christiansen, and Dr. David Fuentes for their help with the design and implementation of this project and with their assistance when there were bumps in the road. I would also like to thank Kristi Kephart and Kelsey Owens who assisted me with set up and advertising for the psychoeducational meetings. Also, I would like to thank the participants in the focus group for assisting me with troubleshooting, and I would like to thank Dr. Paul Michael for becoming my interim reader.

### **List of Figures**

Figure 1. Logic model for the development of a psychoeducational program designed to educate patients about their medications.

Figure 2. Revised logic model for the development of a psychoeducational program designed to educate clinicians about commonly prescribed medications.



## **Development of a Psychoeducational Program Designed to Improve Medication Adherence in a Community Mental Health Setting**

Psychopharmacological treatments for mental disorders began in the 1950s and have flourished over time with the development of new generations of drug treatments. Today, many individuals are prescribed psychotropic medications to help alleviate some of the negative symptoms that accompany certain mental health conditions (Howland, 2007). Most individuals will see symptom improvement from their medications, but poor adherence to prescribed medication regimens is a growing concern in both the mental health field and the larger medical community. “Adherence to (or compliance with) a medication regimen is generally defined as the extent to which patients take medications as prescribed by their health care providers” (Osterberg & Blaschke, 2005, p. 487). Adherence rates are generally calculated as the percentage of a prescribed dose that the patient or client actually consumes relative to the dose prescribed. Unfortunately, the average adherence rates in most clinical trials falls between 43% and 78% within medical settings, whereas the rates of adherence that are considered to be acceptable in order to achieve the desired treatment effect range from 80 to 95% (Osterberg & Blaschke, 2005). In addition, patients with psychiatric conditions typically have adherence rates that are significantly lower than the general medical population. Individuals with depression have average adherence rates of 65%, and patients with psychotic disorders have average adherence rates of only 58% (Osterberg & Blaschke, 2005). It is estimated that non-adherence among individuals with medical or mental health conditions can cost society a total of \$396 to \$792 million in additional medical costs (LaFleur & Oderda, 2004).

Several researchers have begun to question the factors related to the poor rates of adherence that are observed within the medical and mental health communities. When surveyed,

30% of patients attributed poor adherence to forgetfulness, 16% reported that they had other priorities (which may be related to financial concerns), 11% cited a decision to omit doses on their own for unstated reasons, 9% cited a lack of information as the reason behind their decision to discontinue use, and 7% cited emotional factors (Osterberg & Blaschke, 2005). Also, certain symptoms of psychiatric conditions such as hopelessness, poor insight, delusional thinking, or cognitive difficulties may also play a part in poor adherence rates among individuals with psychiatric conditions. Some individuals may choose to suspend their medications because they have begun to experience symptom remission and thus they may mistakenly believe that they no longer need their medication. Finally, an intolerance or poor understanding of side effects may also play a role in an individual's decision to terminate psychopharmacological treatment (Howland, 2007). Due to these factors, LaFleur and Oderda (2004) suggested that providers first question medication non-adherence in patients before they determine that a certain pharmacological treatment is ineffective.

In a study by Sawada et al. (2009), the researchers analyzed the medical charts of patients who were diagnosed with major depressive disorder to better understand adherence rates of patients who had a chronic mental health condition. They found that only 41% of patients were able to remain compliant after six months of psychopharmacological treatment, a finding that has been duplicated across the literature (Osterberg & Blaschke, 2005). Additionally, they found that most patients discontinued their antidepressant medications without consulting their prescribers, and a similar result was also found for those who were prescribed anxiolytics. Clinicians and prescribers therefore need to understand that medication adherence is a potential concern for patients with mental and emotional conditions, and thus strategies need to be implemented that will mitigate this problem within the mental health field.

### **Literature Review**

Several researchers have suggested intervention strategies that could potentially improve adherence rates amongst those undergoing pharmacological treatments. Osterberg and Blaschke (2005) suggested four areas for intervention: patient education, improved dosing schedules, increased access to medication providers, and improved communication between patient and prescriber. Psychoeducational programs designed to educate patients about their medications have been implemented across a variety of settings and for different health concerns, and this method may be one of the most practical and cost-effective options available. It is therefore imperative to determine if psychoeducational interventions can be used to improve medication adherence rates amongst patients in the mental health community as this can ultimately be a simple and effective solution for the growing adherence problem.

George, Elliot, and Stewart (2008) reviewed studies that implemented medication adherence interventions in medically-based community samples of elderly patients who were prescribed at least three different concurrent medications. The psychoeducational components in several of the studies reviewed involved providing patients and their families with a written document that detailed information regarding a patient's specific medications. Other strategies such as memory aids and visual tools were also employed. Although they found psychoeducational interventions to be helpful in some circumstances, the overall results were inconsistent across all of the settings. The authors suggested that future researchers continue to investigate psychoeducational interventions so that more concrete conclusions can be made.

MacKay and Corkum (2006) investigated an ADHD Demystification Workshop which was designed to provide children in second through seventh grade with information about ADHD symptomatology and corresponding treatments. The goal of the study was to evaluate the

effectiveness of such a program at increasing children's general knowledge about their condition. The workshop consisted of two hours of evidenced-based information about ADHD and associated treatments. The researchers hypothesized that children who participated in the workshop would show a better understanding of their disorder on measures of knowledge and retention. The authors utilized the *ADHD Knowledge and Opinion Scale (AKOS)* (Rostain, Power, & Atkins, 1993), and the children were asked to complete it both before and after the workshop. The results indicated that the children had an increased knowledge about ADHD following the workshop and that they had a more favorable opinion about standard treatments (MacKay and Corkum, 2006). This finding indicated that psychoeducational programs are capable of improving an individual's knowledge about his or her condition, and this may lead to an increase in other favorable outcomes as well.

Lopez, Toprac, Crismon, Boemer, and Baumgartner (2005) conducted a preliminary investigation regarding the effects of a psychoeducational program for ADHD on children and families involved in the Children's Medication Algorithm Project (CMAP). The researchers gathered several informative tools from both the mental health literature and government agencies, and the materials were provided to the patients after the decision was made by the families to begin pharmacological treatments. The children and parents were provided with information regarding the advantages and disadvantages of taking specific medications, and they were also provided with information about proper dosing and what to expect while undergoing this form of treatment. In addition, the parents were provided with detailed handouts that discussed the importance of communicating with one's prescriber as well as specific questions they might ask. Additional handouts were provided that delineated possible expectations for a particular medication including: benefits, potential side effects, the expected time frame until one

would see any medication effects, a general description of the medication mechanisms, and what to do if the medication did not work. Over 90% of families received this information in several formats including handouts and audio-video format. On a measure of patient satisfaction, the results of this study indicated that parents were content with the amount of information that was provided and that they found it helpful when attempting to better understand their child's diagnosis. A further investigation is underway by the authors to analyze the treatment adherence effects of such a program.

In another study, Balfour et al. (2006) investigated the use of a psychoeducational intervention (STAART) within a sample of patients with HIV. The goal of the program was to improve patients' readiness for treatment as well as treatment adherence before initiating an intense anti-viral treatment regime. The information that was provided consisted of treatment adherence strategies as well as coping strategies for stress and depressive symptoms. Patients were provided with questionnaires regarding their readiness to begin treatment before and after the implementation of the program. The authors stated that medication knowledge is one of the most salient predictors of treatment adherence amongst HIV patients. The psychoeducational intervention consisted of four weekly meetings, and results indicated that the intervention increased treatment readiness compared to other standard treatments. Additionally, many of the individuals in the study had reduced depressive symptoms following the completion of the psychoeducational program.

Sajatovic, Chen, Dines, and Shirley (2007) conducted a review of the literature on psychoeducational interventions designed to improve medication adherence in individuals with bipolar disorder. The authors stated that bipolar disorder remission rates can often be directly linked to poor medication compliance, and their goal was to discover if simple

psychoeducational programs could improve this problem. They found that the largest gains in medication adherence were the result of specific psychoeducational interventions. They also discovered that, in most studies, individuals with bipolar disorder were relatively uninformed about their disorder when they began psychopharmacological treatments and thus the authors suggested that psychoeducational programs be utilized to allow individuals to have a more active role in managing their symptoms.

In a study by Cakir, Bensusan, Akca, and Yazici (2009), the authors also investigated the overall effects of a psychoeducational program for patients with Bipolar disorder. They found that psychoeducational programs designed to improve treatment compliance also improved patients' overall quality of life by instilling healthy habits to follow and by providing patients with information about how to recognize the prodromal signs of a manic episode. The psychoeducational program utilized lasted a total of six weeks, and participants were classified as either *good* or *poor* attenders based on whether or not they made at least 75% of the weekly meetings. The authors found that those who were more likely to be consistent attenders were those with a more chronic outlook: those who had a family history of bipolar disorder and those with a history of suicide attempts. The authors found that their program improved overall treatment compliance including medication adherence, and these results suggest that psychoeducational interventions can be used to help individuals who may have the most severe forms of certain mental illnesses.

Additionally, in the realm of severe mental illness, Cramer and Rosenheck (1999) developed the Medication Usage Skills for Effectiveness (MUSE) program which was designed to teach severely mentally ill patients to become more compliant with their medication regimens. The initial program was implemented within an inpatient VA day program, and it was used to

inform patients about different cues they could implement to help them to remember to take their medications. The authors also utilized monthly follow-up visits to implement visual aids such as calendars to further assist the patients. They found that those who were involved in the MUSE program had significantly better medication adherence rates (76%) than those in the control group (57%). The results of this study suggest that a simple, focused psychoeducational intervention can improve medication adherence amongst individuals with severe mental illnesses.

### **Purpose of This Study**

As many researchers suggested, poor medication adherence amongst individuals with psychiatric conditions is a growing concern within the mental health field (Osterberg & Blaschke, 2005). A simple and cost-effective method for improving adherence rates involves implementing a psychoeducational program designed to facilitate communication with prescribers and to provide information on the effects and potential side effects of one's prescribed medications. This method has been employed in several medical and mental health settings, and researchers have found that psychoeducational programs have improved knowledge about prescribed medications and have, in some cases, effectively improved adherence rates as well. With specific regards to mental health settings, several authors (Cramer & Rosenheck, 1999; Sajatovic, Chen, Dines, & Shirley, 2007) have found that psychoeducational programs helped to improve overall adherence rates when assessed via self-report measures. Although these findings are promising, there has been a paucity of research regarding the effectiveness of psychoeducational programs designed to improve medication adherence within larger community mental health settings that treat a variety of mental and emotional conditions. Therefore, one of the preliminary purposes of this study was to design an exploratory program

designed to increase participants' general knowledge about commonly prescribed medications within a community mental health setting. A second preliminary purpose of this study was to evaluate the effectiveness of such a program at increasing participants' adherence to their medication regimens. The findings would thus help to determine if such a program is feasible, economical, and effective within similar community samples and to determine if such a procedure should be repeated in the future. The hurdles that were discovered following the implementation of the preliminary study design led to a third purpose of this study which was to understand ways to modify the preliminary program to best meet the needs of Psychology Clinic, the psychological service and training clinic for a small, private university in the Pacific Northwest.

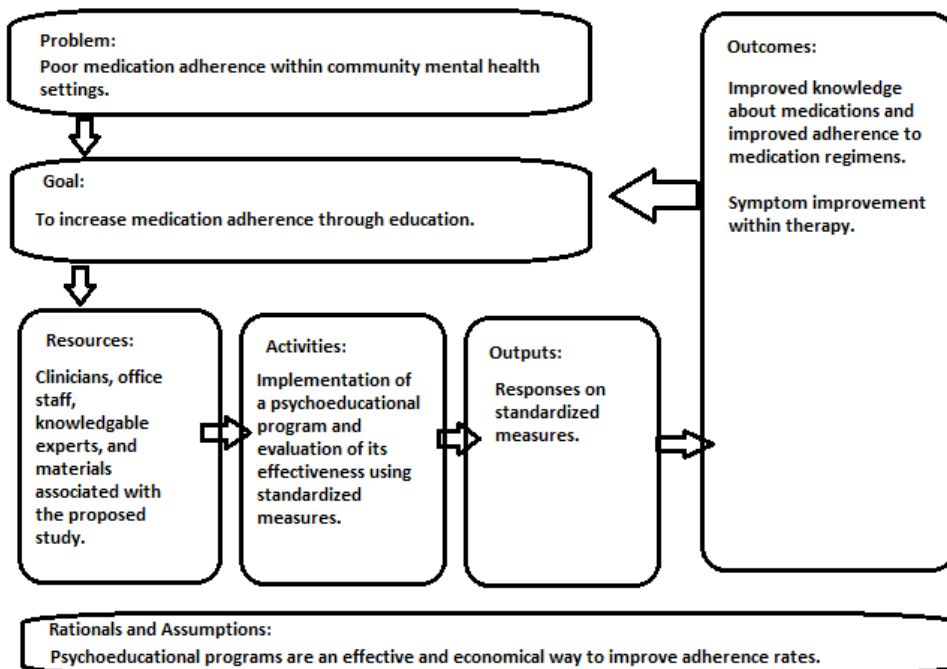
### **Preliminary Logic Model**

A logic model illustrating the proposed program design was created and is depicted in Figure 1 (Frechtling, 2007). The components consist of a Problem Statement, a Goal, a Rationale, Assumptions, Resources, Activities, Outputs, and Outcomes. The Problem Statement is that individuals within a community mental health setting are not taking their medications as prescribed and are thus not reaping the full benefits from their treatments. The Goal is to increase medication adherence rates in adults who receive medication services at Psychology Clinic through a targeted psychoeducational program. The Rationale behind this program is that research suggests that targeted psychoeducational programs can improve general knowledge within a mental health setting, and that this information may lead to better compliance with medication regimens. The Assumptions that underlie this model is that there are resources available within the Psychology Clinic community that can be cultivated to create an economically feasible psychoeducational program with little additional expenses. The Resources



available are student clinicians, a nurse practitioner, office staff personnel, two pharmacists, a designated office space, snacks, fliers, and assessments to measure effect of the program on patients' medication adherence levels. The Activities necessary for this program are advertisements to enlist interested parties, monthly psychoeducational meetings performed by knowledgeable pharmacists, and extensive follow up to determine the effect of such a meeting on medication adherence rates using reliable and established measures. The expected Outputs are the number of classes an individual attends and their responses on the assessments designed to evaluate their medication practices. The expected Outcomes are that attendees will increase their knowledge about their medications which in turn will increase adherence to medication regimens. Additional but less targeted outcomes include overall symptom improvement within therapy.

Figure 1. Logic model for the development of a psychoeducational program designed to educate patients about their medications.



### **Preliminary Study Design**

On the basis of the principles illustrated in the logic model, an exploratory pilot study was designed to test the theory that a psychoeducational program could effectively increase medication adherence rates in patients within a community mental health setting.

### **Description of Participants**

The preliminary study design was set up to utilize participants who were current clients at Psychology Clinic who were over the age of 18 and who were interested in receiving additional information about their psychotropic medications. The participants must be prescribed medications through the on-site nurse practitioner to control the type of information that would be presented within the informational meetings and to tailor the information to specific drug classes.

### **Recruitment**

Ideally, a systematic recruitment procedure would be used to entice individuals to attend a psychoeducational meeting. At Psychology Clinic, clients who request to have medication referrals are required to meet with the on-site nurse practitioner for an initial evaluation to inform them about what to expect from the medication(s) they may be prescribed. After this initial meeting, the patient is typically requested to schedule one or two follow-up visits with the nurse practitioner to adjust doses if necessary and to monitor medication effectiveness. Therefore, the proposed study procedure would require the front desk staff to inquire at this initial appointment if the client wished to be involved in a study that would ask about their medication practices and would also provide them with an opportunity to attend an optional psychoeducational meeting at the clinic. Those who would agree to participate would be included in the study and would be given an informed consent document detailing their duties as a participant. Additionally, fliers would be posted throughout the waiting room to advertise the details of the informational

meetings (See Appendix 1). Clinicians would also be informed about the study via a didactic training seminar so that they could advertise the benefits of the psychoeducational program to their clients.

### **Setting**

Ideally, this study would be conducted at two connected community mental health clinics that are affiliated with the university. Both clinics provide brief and long term mental health services to children, adults, couples, and families within the greater Pacific Northwest for reasonable and often reduced fees. The pilot psychoeducational program was designed to be conducted in each clinic's group space which would seat up to 20 adults.

### **Preliminary Program Design**

The psychoeducational program meetings were designed to occur twice per month, once at each clinic setting, and were intended to be repeated each month until enough preliminary data was collected to be analyzed. They were also designed to occur on a consistent day of the month during the evening at each setting so as to be compatible with clinician and client schedules. The program was designed to last approximately an hour and a half, depending upon the amount of questions and the number of attendees. The program curriculum was set to repeat each month so that individuals could receive comprehensive information by attending any meeting that was most convenient for their schedules. The curriculum of the meeting was designed by David Fuentes, PharmD., a licensed pharmacist within the university's pharmacy training program. It was created to address basic diagnostic conditions that would be seen most frequently by clinicians at both clinic locations, and topic areas would include discussions about depression, anxiety disorders, bipolar disorder, and psychotic disorders. The curriculum would also include

additional time at the end of each meeting for a discussion about any remaining concerns that attendees might have.

The meetings were structured to involve discussions about relevant prescribed medications utilized by the nurse practitioner. Topics were planned to include general medication information, information about side-effects, information about who to turn to for help, and descriptions about what an overdose might look like. The program was designed to have an active learning format, and thus each meeting would have been presented somewhat differently depending upon the types of questions and personal experiences of the attendees. There was also an open discussion and personal reflections component to the meeting curriculum which was designed to engage the audience and to allow for maximum information retention.

### **Medication Adherence Assessment Tool**

An additional component of this proposed study was an evaluation of the effectiveness each meeting had at improving medication adherence rates in attendees. Therefore, a measurement was created to assess for adherence behaviors. Within the literature, one of the most commonly used measures of adherence rates in medical communities is the Morisky *Medication Adherence Questionnaire* (MAQ; Shalansky, Levy, & Ignaszewski, 2004). It contains several yes or no questions that assess past medication use, and it is easy to administer to a variety of patients. In a sample of patients with hypertension, the MAQ significantly and independently predicted non-adherence, and it had variable internal consistency between .32 to .86. The authors indicated that the MAQ might not be well-suited to populations with low adherence base rates, and thus it was not chosen for this study.

An additional measure cited within the literature is the *A14 Scale* of medication adherence (Jank, Bertsche, Schellberg, Herzog, & Haefeli, 2009). It was generated to combat

some of the flaws with the MAQ. The A14 was designed to identify specific barriers to adherence that might help clinicians or prescribers in designing intervention strategies. The non-adherence behaviors assessed by the A14 are divided into several categories; non-adherence due to forgetfulness, patient adaptations to regimens not suggested by the prescriber due to safety or efficacy reasons, non-adherence due to practical life concerns like finances, and non-adherence due to negative attitudes about the drugs and/or side effects. The items are rated by the participant along a 5-point Likert scale with anchors of *never* and *very often*. Scores can range from zero to 56, and a score above 50 would be classified as adherent. The developers administered the A14 in a sample of 150 cardiac patients with chronic medication regimens at the University Hospital Heidelberg in Germany, and the measure was found to have good internal consistency (Cronbach's alpha was .86) and superior psychometric properties to the MAQ. Due to the fact that the A14 was also found to be a useful tool in both medical and mental health settings because it was able to identify barriers that could then be used as targeted medication adherence interventions, it was chosen as an adherence measure for this preliminary study design. Slight modifications were made to make it more relevant to the community mental health population and to reduce bias language. Additional questions were also added to the measure to differentiate between those who chose to attend an informational meeting from those who did not, and to specify which condition(s) an individual was seeking treatment for. The final measure was entitled the *Medication Adherence Measure (MAM)*; See Appendix 2).

### **Preliminary Procedure Part I: Assessment of Medication Adherence**

The preliminary procedure called for participants to sign an informed consent form at the time of their initial medication evaluation appointment by the front desk staff who would inform them that there were optional monthly medication informational meetings at each clinic. The

participant would also be informed that attendance at an informational meeting was an optional component of the study. If there were any questions at this point, participants were directed to their therapists who had been briefed about the study design. Participants would then be handed the one-time demographic questionnaire (See Appendix 3) and a copy of the *Medication Adherence Measure (MAM)* by the front desk staff. The initial MAM would measure the participant's standard medication adherence practices at baseline. In the preliminary procedure, two additional numerically linked duplicate MAM measures would be stored in the client's file so that the participant's adherence rates could be measured over time at each subsequent follow-up meeting with the nurse practitioner. Each measure would be labeled with a linked ID number (different iterations would be labeled A, B, and C), and all identifying information would be kept confidential and separate from measurement results. All measures would be stored within the client's file so that they could be easily found for each measurement interval and could be provided to the client in the waiting room by the front desk staff prior to his or her medication appointment.

### **Preliminary Procedure Part II: Assessment of General Knowledge**

In a study by Alliger and Janak (1989), the authors emphasized the common disconnect between learning and resulting behavior change, and they suggested that an assessment of one's reactions or knowledge after a given training program should be conducted in order to predict the potential for future behavior change. Therefore, a measure was designed to assess the general knowledge of the informational meeting attendees at the two clinics to determine what degree of information they retained from the program.

For this part of the preliminary procedure, a questionnaire entitled the *General Knowledge and Opinions Measure (GKOM)*; (See Appendix 4) was developed based on the

program curriculum designed by Dr. Fuentes. It was loosely based on a similar measure of retained knowledge developed by McKay and Corkum (2006) in their study of the effects of a psychoeducational program designed for children and families with ADHD. The GKOM was also designed to be stored in the client's file and would be administered prior to a medication appointment. Similar to the MAM, each measure contained a participant ID number, and each installment was identified by letter. However, unlike the MAM, for this part of the procedure, the participant would only be asked to fill out the GKOM after attending an informational meeting.

### **Preliminary Procedure Part III: Assessment of Treatment gains**

LaFleur and Oderda (2004) suggested that researchers should investigate the effects of their interventions on clinical outcomes to determine if symptom improvement was obtained. Therefore, one of the preliminary components of this study was to investigate the effect that a psychoeducational program had on treatment outcome by way of improved compliance with medication regimens. A measure was created to assess a participant's overall treatment gains within the therapy setting, and it was entitled the *Measure of Treatment Gains (MTG)*; See Appendix 5). Unlike the previous assessments, the MTG was designed to be completed by the therapist after each meeting with the nurse practitioner. Duplicate copies for the therapist would also be stored within the client's file with the other measures to allow for easy access by the clinician.

### **Procedure Implementation and Impediments**

This preliminary study design was put into place as described in the spring of 2011. Three informational meetings were conducted at each clinic location during that time. From its inception, there were no participants who agreed to be included in this study and no one chose to

attend the free informational meetings. Several suggestions were made regarding how to improve recruitment, and several modifications were made to the preliminary procedure.

### **Collection of Data**

After the procedure was implemented, the front desk staff began to report that data collection would be too time consuming for them to complete in addition to their regular duties. The procedure was therefore modified to allow for a separate research assistant to collect the data at all data points. This research assistant would monitor when participants had a medication appointment and would prepare the file with the appropriate measures. As this problem was corrected, a new problem became apparent.

### **Clinician Involvement**

Part of the procedure required clinicians to talk with their clients if participants came to them with questions about the study. Clinicians were also asked to help advertise the benefits of the informational meetings to their clients. However, despite a didactic training about the study design and reminder emails about discussing the psychoeducational meetings with clients, few clinicians reported doing so. This was in contrast to many clinician reports that a psychoeducational meeting would greatly benefit several of their clients.

### **Participant Recruitment**

There were several components of the original procedure that were designed to make attendance at an informational meeting feasible for clients. The informational meetings were offered at each of the locations where clients already received therapy services. They were completely free and were offered in the evening so as not to conflict with normal working hours. They were also repeated monthly so that individuals could choose which meeting worked best with their schedules. Additionally, there were fliers available within the waiting rooms to



advertise the meetings to clients. However, despite these efforts, there were no participants in the study and there were no attendees at any of the three meetings held throughout the study.

Although this finding was likely the result of a culmination of the concerns discussed, it was baffling due to the fact that several clinicians had expressed their endorsement of such a program during a preliminary focus group conducted one year prior to this study. Those clinicians overwhelmingly approved of a program designed to educate clients about their medications as a way to improve their clients' medication adherence rates. Therefore, in order to understand how to adjust the proposed program so as to obtain the desired outcome of medication adherence improvement, a more targeted focus group was conducted. This time, the goal would be to discover ways to improve the existing procedure to combat poor participant and clinician involvement.

### **Focus Group Method**

#### **Description of Participants**

In an effort to determine what caused the preliminary study to fail, student clinicians were recruited at both clinics to answer questions about how to improve medication adherence in their clients via a psychoeducational program (See Appendix 6 for a list of the questions asked). There were seven clinicians total who agreed to be part of the focus group. The first four were from the west side clinic, and the last three were from the centrally located clinic. Clinicians varied in their level of experience from 2 to 5 years of training. There were two men who agreed to participate and five women.

#### **Setting**

Clinicians were interviewed at both clinic locations of the Psychology Clinic within the group rooms.

**Procedure**

The focus groups were established as a way to elicit feedback about the failed preliminary study design procedure. The suggestions made would be incorporated into a new logic model for future study designs. Ideally, a new procedure would be generated to obtain the desired outcome of improved medication adherence amongst community mental health patients. Student clinicians were informed of the focus groups via a clinician listserv email that asked for feedback about the failed procedure. Volunteers were those who were available during the two hour window that was provided in the email. Each participant signed an informed consent form indicating that their answers would be kept anonymous but could also potentially be used to influence future implementations of the preliminary study design. During the focus groups, the questions were written on a white board within the room, and each individual was asked to provide their honest opinion on each topic. Their responses are summarized below.

**Participant One**

This participant stated that she had a client that asked her repeatedly about his medications and how they might impact his life. She stated that she often felt stumped when he did this because she did not have enough training to answer his questions fully and she had limited knowledge about where to refer him to for information. When asked about any general suggestions she had to improve patient knowledge about commonly prescribed medications, she stated that she would like to see better integration between Psychology Clinic and the pharmacy program also housed within the university. She stated that there are few interdisciplinary connections within the professional programs, and she would like to see this change so that she could easily make referrals to other in-house professional services. This would improve overall coordination of care, and it would allow patients easy access to much-needed services.

When asked about how to specifically improve medication adherence rates, this participant stated that she would like to see the nurse practitioner become more available, especially for medication consultation. She stated that accessibility by phone would help clients get answers to common questions without having to wait up to a month for a one on one appointment. She also suggested that the clinic hire an additional nurse practitioner, if even as a trainee, to increase the number of available appointments.

When asked about the utility of this psychoeducational program, she stated that she saw the fliers within the clinic but did not remember to inform her clients about the program. She stated that if her supervisors had repeatedly endorsed the medication information meetings, she may have remembered more easily that they were available and appropriate for her clients.

### **Participant Two**

The second participant reported that she had several clients who were taking psychotropic medications that were prescribed through the nurse practitioner. She stated that one of her clients prematurely discontinued his medications due to negative side effects, but she was not adequately trained to discuss these concerns with her client. This participant suggested that clinicians receive proper training on medications and potential side effects so that this situation can be avoided in the future. She suggested that clinicians receive certification training through knowledgeable experts about psychopharmacology so that they can become certified, much like alcohol and drug counselor training. At the very least, this clinician strongly favored mandatory psychopharmacological training for all counselors prior to treating clients. This participant stated that she did not know why clients did not attend the informational meetings, but that after hours programs of any kind were routinely poorly attended by clients.

**Participant Three**

This participant had several clients who were receiving medication services through other sources. She stated that client attendance to educational or therapy-oriented programs has been a difficult problem to solve for many years and that she was not surprised that no one attended the informational meetings. However, she stated that at a different training site, she noticed one agency mitigating this problem by offering coupons that discounted therapy services in exchange for attendance to a group therapy service. Her suggestion was to utilize this option for the nurse practitioner services which can be quite expensive. If clients get a reduced fee to see the nurse in exchange for going to an educational meeting, she theorized that they may be more inclined to attend a psychoeducational program at this clinic.

**Participant Four**

This participant stated that there is an unstated bias amongst student clinicians in that they often do not strongly value psychopharmacological treatments for mental health concerns. Despite the American Psychological Association's standards of care (APA, 2002) that suggest well-rounded treatment plans that often include medication services, many novice clinicians are of the mindset that medications are unnecessary or perhaps even detrimental to a client's well-being. This participant stated that this cultural climate may have limited the amount of buy-in that clinicians had in supporting the preliminary psychoeducational program. This belief system may have prevented clinicians from discussing medications with their clients, and it may have also stopped them from discussing any medication-related programs as well. Therefore, this participant suggested that, should another program take place, supervisors would need to educate novice clinicians about this cultural belief system so that more buy-in could occur on behalf of the clinicians.

**Participant Five**

This participant suggested that the nurse practitioner become more available through consultation appointments so that clients could contact her with questions without having to wait for an available appointment. Additionally, this participant also suggested that a reduced fee be offered in exchange for attendance at a psychoeducational meeting.

**Participant Six**

This participant had several clients who prematurely stopped their medication regimens without consulting the nurse practitioner because they could not get an appointment to see her. She stated that she was unaware that the medication information meetings existed and that she would have told her clients about them if she had know about them. When asked about how medication information might be best received by clients, she also suggested a consultation service so that clients could talk to someone quickly about their questions. Additionally, she suggested that visual aids be made available so that clinicians could have something they could hand to clients with common frequently asked questions and answers should they come to therapy with medication questions.

**Participant Seven**

This participant also suggested that clinicians become educated about psychopharmacology instead of clients so that they could pass the information along to those who presented with questions. She stated that a certification program would likely be well received by most novice clinicians because it would give them a competitive edge in their training which would better prepare them for internship and other professional roles.

### **Focus Group Discussion**

There were some common themes presented by participants in the focus groups. Most of the participants simply forgot about the psychoeducational meetings and therefore did not have discussions with their clients. Those who acknowledged this often cited increased supervisor buy-in as a possible solution to a lack of discussions with clients about the meetings. When asked about how medication information could best reach clients, most individuals believed that the nurse practitioner needed to be more available for consultation, perhaps through an answering service, to avoid a lengthy wait time between appointments. Additionally, several people suggested an incentive program such as reduced-fee coupons for those who attended a psychoeducational meeting about medications as a way to mitigate the trend of poor attendance at after-hours programs. This would help to mitigate the cultural barriers to psychopharmacological education that many novice clinicians reportedly share. One person suggested that the in-house pharmacy school be involved in referral services as well to ease the burden on the nurse practitioner. Also, several participants favored a counselor education program rather than a client-focused educational program so that clinicians could directly educate their clients whenever questions occurred.

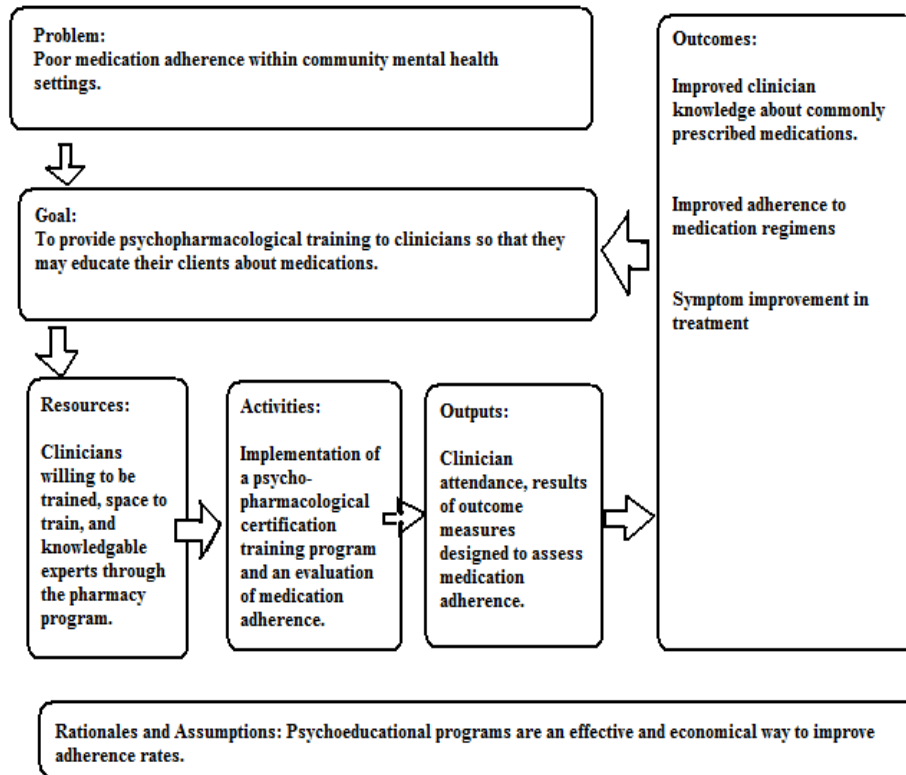
If economic resources were available, several of these suggestions would be put into practice to determine if they could succeed at improving medication adherence rates. However, the current operating budget of Psychology Clinic does not allow for additional nurse practitioner services or outside consultation programs, so the consultation services with the pharmacy training program and the nurse practitioner answering service were not viable options. Additionally, it is unclear if there are economic resources available to offer reduced-fee incentives in exchange for attendance at an educational meeting as Psychology Clinic already

offers sliding-scale fees to help mitigate the expense of therapy and medication services for low-income clients. Therefore, the most economically viable options given the resources available at this time are to offer a psychoeducational program for clinicians and to increase supervisor involvement to improve clinician buy-in.

### **Revised Logic Model**

The original logic model that was used to establish the failed preliminary program design was modified to incorporate the suggestions that were generated in the focus groups. The problem section of the new logic model will remain the same because poor medication adherence is still a well-documented problem within the mental health community. The goal, however, will now be to provide psychopharmacological training to clinicians so that they may then educate their clients when questions arise. The resources are similar to the previous model in that knowledgeable experts are on hand to train clinicians through involvement of the pharmacy program. Activities would likely change to involve developing a psychoeducational certification program for clinicians and a potential evaluation of medication adherence rates over time to assess for improvement. Outputs would change to include clinician attendance at an educational training program, and they would also include the results of any new outcome measures of adherence rates that were deemed appropriate. The Outcomes would likely become improved clinician knowledge about commonly prescribed medication, improved adherence to medication regimens on whatever relevant assessment tool was selected, and symptomatic improvement in therapy.

Figure 2. Revised logic model for the development of a psychoeducational program designed to educate clinicians about commonly prescribed medications.



### Focus Group Conclusion

The suggestions generated in the focus group led to the development of a new logical model that included a clinician educational training program rather than a client-focused educational program. Although this new program design shows promise, there are a few concerns that need to be addressed. One is that the culture of Psychology Clinic may be that medication services are not valued as much as therapy. This value will need to be addressed by involving the clinical supervisors who are unlikely to share this novice clinician bias. Anyone who attempts to develop a new program based on the logic model presented should be sure to generate full faculty support prior to implementation. Additionally, a certification training



program in psychopharmacology is something that the institution would have to support and approve. This may require some programmatic adjustments which may take time. A true certification program may not be feasible, but a mandatory training program for all novice clinicians may be possible with the proper resources. Additionally, there is limited evidence to suggest that clinician training will lead directly to improved education among clients. This link will be improved if the cultural values of the institution change to support a discussion about medication treatments. However, there are limited ways to assure that clinicians will adequately address the concerns of their clients following such a training program. The assessments needed to assess for medication adherence and treatment gains given this new model will need to be created or modified from existing options in whatever new program is developed. The measures created for the failed program design in this study may be modified to fit a future program design, but they may prove to be inappropriate given the change in focus suggested.

Overall, the feasibility of the new program suggested from the revised focus group is manageable, and only slight modifications to the university's training practices and Psychology Clinic's general practices are necessary to implement it. It is still relatively economically feasible, and the pharmacist involved in the original study is still willing to participate in any psychoeducational training program that is requested. The same resources are available, and the problem still exists. The next person who attempts to develop a program designed to improve medication adherence rates in this setting should receive better results if they follow the revised focus group recommendations, and hopefully this new project will make a lasting impact on Psychology Clinic for years to come.

## **General Discussion and Conclusions**

As the literature suggests, medication adherence is a common problem within health settings, but especially mental health settings. Often, common medical practices leave little room for clients to receive all the information they may need when they are prescribed psychotropic medications for the treatment of psychological conditions. In many instances, complications or questions may arise, and clients who are not properly educated about what to expect from their medications may discontinue using them or may take them in a way that is not compliant with their prescriber's instructions. This poor adherence to medicinal regimens can lead to fewer symptom improvements and poorer treatment outcomes. The resulting cost to society is huge (LaFleur & Oderda, 2004) in terms of unnecessary treatment remedies and increased recidivism rates. The consensus within the literature is that psychoeducational programs are effective and low cost ways of filling in the informational gaps clients sometimes experience within the medical community. The assumption is that information about how to take a prescribed medication properly and information about potential side effects may help a client adhere more fully to their medication regimens as they would hopefully be more informed about what to expect.

In many well-designed studies, psychoeducational programs brought about increased knowledge and improved adherence behaviors. Therefore, a psychoeducational training program was chosen as the best medium to inform clients at Psychology Clinic about their medications. Unfortunately, this program failed to yield any participants, and thus it was determined to be an ineffective strategy in this setting. Several barriers to attendance were identified and corrected, but ultimately a new strategy was needed. Focus group results yielded interesting theories on both why the designed program failed and how information could still be used to bring about

improved adherence in clients. The solution that was most agreed upon was a psychoeducational training model targeted at student clinicians rather than clients. This solution is practical and economical, but it has some flaws. First and foremost, the suggested certification model will require institutional approval, which may not be possible. Additionally, it will require clinician involvement in a culture where medication treatment modalities are less supported than therapeutic ones. And, perhaps most glaringly, there are few ways to ensure that clinician knowledge will directly translate to improved medication adherence in clients, as this is a step removed from the educational chain. It is problematic enough to attempt to generate behavior change in an individual through education, and it may prove to be even harder when the target individual is not receiving this information first hand. There are also some flaws with regard to outcome assessments in that it may be difficult to measure the desired outcome of such a model, especially given the assessment tools that are currently available.

Despite these concerns, a new clinician training program may not be as ill-fated as the program design outlined here. If Psychology Clinic decides to take on a clinician psychopharmacological training program aimed at improving client medication adherence, there are several steps that would need to occur. First, a psychoeducational training program would need to be designed that was applicable to novice clinicians. This program would need to incorporate basic psychopharmacological information about the most commonly prescribed medications in the clinic, and knowledgeable experts would need to be incorporated in the teaching process. As mentioned, there are members of the pharmacy school that would be willing to take on this role, but this too would require program approval. In addition to the program design component, the clinic would also need to address when and how the student clinicians would receive the information. It is likely that a psychopharmacological training program could

be implemented in installments via a workshop, but the feasibility of this modality would need institutional approval as well. Also, the supervisors would need to be included in this training so that they could in turn encourage the clinicians to pass the acquired information along to their clients. Hopefully, this would reduce the bias against psychopharmacological treatments that is reportedly part of the culture of the clinic. Finally, assessment tools would need to be generated or modified from existing versions to assess whether such a program yielded improved medication adherence. This assessment piece may not be feasible, but it should be attempted if possible. Several of the measures utilized within the failed program design could potentially be adapted to meet this need.

Should these changes be implemented, the revised focus group recommendations and the clinician education program described may be useful ways to bring about improved adherence rates within Psychology Clinic clients. However, it is up to the institution to determine if this is a problem that they currently wish to address. There are several components that need approval, and any single step may be vetoed, thereby obviating the continuation of the program. Additionally, those in charge may decide that adherence rates are not a primary concern at this time. In that case, it is possible to adapt this model to another setting if desired. The most important thing to consider is that the program design needs to be malleable given the existing situation at implementation. Few programs work exactly as designed, and changes may be needed to adapt the clinician training model in a feasible and realistic way. Despite the hurdles listed, however, psychoeducation is still the most feasible and recommended way to address the growing problem of medication adherence. Hopefully this new model will move community mental health clinics one step closer to making poor adherence a thing of the past.

## References

- American Psychological Association. (2002). *Ethical principles of psychologists and code of conduct*. Washington DC: Author.
- Alliger, G. M., & Janak, E. (1989). Kirkpatrick's levels of training criteria: Thirty years later. *Personnel Psychology*, 42, 331-343.
- Balfour, L., Kowal, J., Silverman, A., Tasca, G. A., Angel, J. B., MacPherson, P. A., et al. (2006). A randomized controlled psychoeducation intervention trial: Improving psychological readiness for successful HIV medication adherence and reducing depression before initiating HAART. *AIDS Care*, 18(7), 830-838.
- Cakir, S., Bensusan, R., Akca, Z. K., & Yazici, O. (2009). Does a psychoeducational approach reach targeted patients with bipolar disorder. *Journal of Affective Disorders*, 119, 190-193.
- Cassidy, C. M., Rabinovitch, M., Schmitz, N., Joobar, R., & Malla, A. (2010). A comparison study of multiple measures of adherence to antipsychotic medication in first-episode psychosis. *Journal of Clinical Psychopharmacology*, 30(1), 64-68.
- Cramer, J. A., & Rosenheck, R. (1999). Enhancing medication compliance for people with serious mental illness. *The Journal of Nervous and Mental Diseases*, 187(1), 53-55.
- Frechtling, J. A. (2007). *Logic modeling methods in program evaluation*. San Francisco: John Wiley & Sons, Inc.
- George, J., Elliott, R. A., & Stewart, D. C. (2008). A systematic review of interventions to improve medication taking in elderly patients prescribed multiple medications. *Drugs & Aging*, 25(18), 307-324.
- Howland, R. H. (2007). Medication adherence. *Journal of Psychosocial Nursing*, 45(9), 15-21.

- and Aging*, 25(4), 307-324.
- Jank, S., Bertsche, T., Schelberg, D., Herzog, W., & Haefeli, W. E. (2009). The A14-scale: development and evaluation of a questionnaire for assessment of adherence and individual barriers. *Pharmacy World Science*, 31, 426-431.
- Kripalani, S., Risser, J., Gatti, M. E., & Jacobson, T. A. (2009). Development and evaluation of the Adherence to Refills and Medication Scale (ARMS) among low-literacy patients with chronic disease. *Value in Health*, 12(1), 118-125.
- LaFleur, J., & Oderda, G. M. (2004). Methods to measure patient compliance with medication regimes. *Journal of Pain and Palliative Care Pharmacotherapy*, 18(3), 81-89.
- Lopez, M. A., Toprac, M. G., Crismon, M. L., Boemer, C., & Baumgartner, J. (2005). A psychoeducational program for children with ADHD or depression and their families: Results from the CMAP feasibility study. *Community Mental Health Journal*, 41(1), 51-68.
- MacKay, L., & Corkum, P. (2006). Evaluation of a demystification workshop for children with ADHD. *Journal of Developmental and Physical Disabilities*, 18(3), 319-324.
- Osterberg, L., & Blaschke, T. (2005). Adherence to medication. *New England Journal of Medicine*, 353(5), 487-498.
- Paschal, A. M., Hawley, S. R., St. Romain, T., & Ablah, E. (2008). Measures of adherence to epilepsy treatment: Review of present practices and recommendations for future directions. *Epilepsia*, 49(7), 1115-1122.
- Rolley, J. X., Davidson, P. M., Dennison, C. R., Ong, A., Everett, B., & Salamonson, Y. (2008). Medication adherence self-report instruments: Implications for practice and research. *Journal of Cardiovascular Nursing*, 23(6), 497-505.

- Rostain, A. L., Power, T. J., & Atkins, M. S. (1993). Assessing parents' willingness to pursue treatment for children with ADHD. *Journal of the American Academy of Child and Adolescent Psychiatry*, 32(1), 175-181.
- Sajatovic, M., Chen, P., Dines, P., & Shirley, E. R. (2007). Psychoeducational approaches to medication adherence in patients with bipolar disorder. *Disease Management and Health Outcomes*, 15(3), 181-192.
- Sawada, N., Uchida, H., Suzuki, T., Watanabe, K., Kikuchi, T., Handa, T., et al. (2009). Persistence and compliance to antidepressant treatment in patients with depression: A chart review. *BMC Psychiatry*, 9(38), 1-10.
- Shalansky, S. J., Levy, A. R., & Ignaszewski, A. P. (2004). Self-reported Morisky score for identifying non-adherence with cardiovascular medications. *The Annals of Pharmacotherapy*, 38, 1363-1369.
- Thompson, K., Kulkarni, J., & Sergejew, A. A. (2000). Reliability and validity of a new Medication Adherence Rating Scale (MARS) for the psychoses. *Schizophrenia Research*, 42, 241-247.

Appendix 1

**Sample Flier**



## **Understand Your Medications!**

**A Free Medication Education Class for the Public**

**Come and meet with knowledgeable pharmacists to learn about commonly prescribed medications for psychological conditions.**

**We can tell you anything you would like to know about your medicine including information about side effects and about how different drugs interact.**

**Location: Psychology Clinic**

**Time: March 15<sup>th</sup>, 2011 from 6 – 8pm in the group room**





## Appendix 2

**Medication Adherence Measure**

Have you attended an informational meeting regarding the medications that are commonly prescribed at Psychology Clinic? Yes \_\_\_\_\_ No \_\_\_\_\_

Please circle the condition(s) for which you are seeking treatment at Psychology Clinic (Circle all that apply). If Other, please specify.

**Depression    Anxiety    Bipolar Disorder    Psychotic Disorder    Other \_\_\_\_\_**

Regardless of your attendance at an informational meeting, please answer the following questions about your medication practices based on the following scale:

**0-----1-----2-----3-----4**

**Very Often**

**Occasionally**

**Never/NA**

- \_\_\_\_\_ 1. When I get side effects from a drug, I stop taking it for good
- \_\_\_\_\_ 2. When I get side effects from a drug, I stop taking it for a while (days or weeks)
- \_\_\_\_\_ 3. When my symptoms get worse, I increase the dose of the respective drug myself
- \_\_\_\_\_ 4. When a drug has no effect, I stop taking it for good
- \_\_\_\_\_ 5. If necessary, I take an extra-dose or miss out a dose (e.g. because of traveling)
- \_\_\_\_\_ 6. When my symptoms get better, I stop taking the respective drug for good
- \_\_\_\_\_ 7. When my symptoms get better, I stop taking the respective drug for a while (days or weeks)
- \_\_\_\_\_ 8. When the costs or co-payment of my drug is too high, I stop taking it for good

- \_\_\_\_\_ 9. I take my medication less often or stop taking it for a while to make the package/bottle last longer
- \_\_\_\_\_ 10. When I do not manage to get my prescription refilled on time, I stop taking my drug for a while
- \_\_\_\_\_ 11. I do not take my drug at all, because in my opinion it is not good to treat my symptoms with drugs
- \_\_\_\_\_ 12. Now and then I stop taking my drug for a while since I dislike taking drugs all the time
- \_\_\_\_\_ 13. I forget to take my drug
- \_\_\_\_\_ 14. I am unable to take my drug due to my medical condition (e.g. because I am not able to open the package or swallow the tablet)

Appendix 3

**Demographic Information**

**Age:** \_\_\_\_\_

**Gender:** \_\_\_\_\_ **Male**  
\_\_\_\_\_ **Female**  
\_\_\_\_\_ **Other**

**Race or Ethnicity (please identify):** \_\_\_\_\_

**Primary language (please identify):** \_\_\_\_\_

**Marital Status:** \_\_\_\_\_ **Single/never married**  
\_\_\_\_\_ **Divorced/legally separated**  
\_\_\_\_\_ **Widowed**  
\_\_\_\_\_ **Married or in a long-term relationship**

**Highest level of education completed:** \_\_\_\_\_ **Grade school**  
\_\_\_\_\_ **High school diploma/GED**  
\_\_\_\_\_ **Some college**  
\_\_\_\_\_ **College or beyond**

## Appendix 4

**General Knowledge and Opinions Measure**

**Please answer the following questions only after you attended a medication informational meeting (if applicable) at Psychology Clinic. All information will be kept confidential and anonymous. Thank you for your participation.**

1. How useful did you find this meeting? Please circle one.

1	2	3	4
Not at All Useful	Somewhat Useful	Moderately Useful	Very Useful

2. What condition(s) were you seeking information for? Please circle all that apply. If Other, please specify.

Depression      Anxiety      Bipolar Disorder      Psychotic Disorder

Other \_\_\_\_\_

3. What medication(s) are you currently taking for a mental health condition as prescribed by Psychology Clinic?

4. Are you currently taking any other prescription medications for other medical or mental health conditions that are not prescribed by Psychology Clinic? If so, please list all that you can remember, or if this does not apply, please leave this question blank.

5. After attending this meeting, why do you feel that it is important for you to take your medications as prescribed?

6. What are some of the side effects that you learned about for your prescribed medication or medications?

7. After attending this meeting, at what point might you seek additional help from your prescriber?

8. After attending this meeting, at what point do you feel that would you be in danger of overdosing on your medication(s)?

## Appendix 5

**Measure of Treatment Gains**

**Note to clinicians:** This measure is part of an investigation on treatment improvements in association with a psychoeducational program on medications provided at Psychology Clinic. As part of this study, you will be asked to fill out this form after you have referred a client to the Nurse Practitioner for an initial evaluation *and* once per month for two months following this first appointment in order to assess whether treatment gains occurred during this time. It is expected that follow up dates will be as close to the date of the initial appointment as possible (i.e. if the client had his/her first appointment on the 15<sup>th</sup> of the month, this should be the time of the month that you should fill out the form for the other two data points). This form will be the same for all three measurement points, but each installment will be denoted with either an A, B, or C to denote when it occurred. Also, some questions may not be applicable at all measurement points, and these exceptions are clearly stated. It is expected that additional follow-up appointments with the Nurse Practitioner will occur during this two month measurement time frame, and thus this form will assess whether treatment gains accompany medication services. Thank you for your participation.

1. What diagnosis or diagnoses (Axis I only) did this client have at the time of the referral to the Nurse Practitioner?

2. What was this client's standard outcome score (OQ score) at the time that a referral for medication was made?

3. What is this client's current OQ score? *(Answer only if this is the second or third measurement point and leave blank if this is the first time you have filled out this form).*

4. How much improvement have you seen in this client's presenting problem since his or her meeting with the Nurse Practitioner? Please circle one. *(Please answer this question only if this is the second or third time you are filling out this form for your client).*

1	2	3	4	5
None	Some	Moderate	A Significant Amount	Symptom Remission

Appendix 6

**Focus Group Questions Principal Investigator.**

1. How many of your clients are getting medications through the nurse practitioner?
2. Are you talking to your clients about their medications? What kinds of things do you talk about? What kinds of questions do your clients have?
3. Have any of your clients brought up concerns about their medications to you?
4. Are you aware that non-adherence to medication regimens is a problem within the mental health field?
5. Over the last few months, a procedure was implemented which was designed to inform clients about their medications as a way to help them take their medications as prescribed. However, client participation was minimal. What suggestions do you have to make an informational meeting more accessible to clients?
6. What other ways might clients receive information about their medications?
7. What economically feasible suggestions do you have to improve medication adherence rates amongst clients who seek mental health services?
8. Do you have any specific suggestions regarding the procedure that was implemented that might make it more feasible in the future?